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inhibiting a transmission of the DTMF signal from the telephone unit to the telephone network and allowing the transmission of the DTMF signal directly to the processing device when the DTMF signal is from the telephone unit by switching the telephone network between either the telephone unit or the processing device so as to disconnect the telephone network from either of the telephone unit or the processing device.

20. (NEW) A computer readable medium storing program code causing a processor to perform a method in a communication support system to connect a telephone unit through a control device to a processing device and to connect a telephone network to the control device, the method comprising:

either detecting a Dual Tone Multi-Frequency (DTMF) signal sent by the telephone unit or a network DTMF signal sent from the telephone network, wherein the DTMF signal from the telephone unit has a predetermined value different from a value of the network DTMF signal;

determining whether the DTMF signal is from the telephone unit; and
inhibiting a transmission of the DTMF signal from the telephone unit to the telephone network and allowing the transmission of the DTMF signal directly to the processing device when the DTMF signal is from the telephone unit by switching the telephone network between either the telephone unit or the processing device so as to disconnect the telephone network from either of the telephone unit or the processing device.

REMARKS

STATUS OF CLAIMS

Claims 1-6, 8-13 and 15-17 were pending and stood rejected. By this Response, claims 1 and 10 and 16-17 have been amended and new claims 18-20 have been added. Therefore, claims 1-6, 8-13 and 15-20 are now presented for consideration.

REJECTIONS UNDER 35 U.S.C. §103(a)

In the Office Action at page 2, numbered paragraph 1, claims 1-6, 8-13, and 15-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Manning et al. (U.S. Patent No. 5,898,756) in view of Rosen et al. (U.S. Patent No. 5,864,607) and further in view of Bulfer (U.S. Patent No. 6,208,966).

Reconsideration of this rejection is respectfully requested.

Claim 1, as four times amended, recites a communication supported system which at least has the distinguishing features of "a signal transmission inhibition unit including a switch connected between the telephone network and either the telephone unit or the data processing device to switch therebetween so as to selectively disconnect the telephone network from either of the telephone unit or the data processing device and to selectively inhibit transmission of the DTMF command signal from the telephone unit to the telephone network and allows transmission of the DTMF command signal directly to the data processing device when the DTMF command signal indicates one of the plurality of telephone services." Thus, the invention of claim 1, selectively disconnects the telephone network from either of the telephone unit or the data processing device to provide adequate security for a telephone service. (See present specification at page 10, lines 14-16.)

Manning et al. "is directed to a parallel-connected device that inhibits the transmission of dialing signals over a telephone link. An a.c. load, preferably a series-connected capacitor and resistor, is provided to inhibit transmission by attenuation of the signals." (See Manning et al. at column 2, lines 7-11.) In particular, "[a] switchable a.c. load 200 is selectively connectable across the tip 20 and ring lines 22 of the telephone link 10 to severely attenuate signals sent between the telephones 30, 32 and the central office 5. This operation is provided by a relay SW1 that is under the control of the microprocessor 400. When the relay SW1 is closed by the microprocessor, a series connected capacitor C1 and resistor R1 provide a low impedance path between tip and ring. Resistor R1 and capacitor C1 are selected such that DTMF signals, for example, generated by telephones 30 or 32 are attenuated to a level at which the central office 5 will not recognize the tones as valid." (See Manning et al. at column 4, lines 21-32.)

Since the Manning et al. device is selectively connected across the tip line 20 and the ring line 22, it is not possible for the Manning et al. device "to selectively disconnect the telephone network from either of the telephone unit or the data processing device." (as recited in claim 1. This is because the Manning et al. device merely provides a low resistance path between the tip line 20 and the ring 22, but does not disconnect either of these lines.

Further, in the Manning et al. device, determining whether a detected command signal is a DTMF command signal from a telephone unit or a network DTMF command signal from the telephone network is impossible, since Manning et al. does not discuss any difference between the telephone unit and the telephone network.

In contrast to the Manning et al. device, according to an embodiment of the present invention recited in claim 1, when the DTMF command signal, indicating one of the plurality of

telephone services, is detected, the signal transmission inhibition unit serves to disconnect the telephone network from the telephone unit and to inhibit transmission of the DTMF command signal from the telephone unit to the telephone network and allows transmission of the DTMF command signal directly to the data processing device.

Accordingly, the present invention recited in claim 1 ensures that the DTMF command signal from the telephone unit, indicating one of the plurality of telephone services, is not transmitted from the telephone unit (i.e., a sending-side user) of the communication support system to any telephone unit (i.e., a receiving-side user) over the public switched telephone network. That is, the features in claim 1 to "inhibit transmission of the DTMF command signal from the telephone unit to the telephone network" ensures that the DTMF command signal from the telephone unit is not transmitted to the receiving-side telephone unit, and thus the receiving-side telephone unit will not inconveniently ring.

Rosen et al. discloses a computer system which communicates "between the PIU-connected telephones 104 and 108 and the computer system 100 ... through radio frequency (RF) communication between the PIUs 106 and 110 and the CIU 102 over the internal telephone network line 130. ... When a PIU-connected telephone is initially picked up, the PIU supplies power to the telephone instead of the phone company 134 and thus prevents the telephone from seizing the telephone network line 130. This effectively isolates the telephone from the external phone line 128, allowing the telephone to communicate with the CIU 102 by RF carrier signals sent over line 130. When the non-PIU telephone 114 is picked up, the CIU 102 turns off its carrier signal to force all telephones to revert to ordinary telephone operation." (See Rosen et al. at column 4, line 58 to column 5, line 6.)

Accordingly, Rosen et al. does not disclose or suggest "to selectively disconnect the telephone network from either of the telephone unit or the data processing device" and furthermore, does not disclose or suggest "a signal transmission inhibition unit including a switch connected between the telephone network and either the telephone unit or the data processing device to switch therebetween ... and to selectively inhibit transmission of the DTMF command signal from the telephone unit to the telephone network and to allow transmission of the DTMF command signal directly to the data processing device when the DTMF command signal indicates one of the plurality of telephone services" (as recited in claim 1). This is because the Rosen et al. system uses RF carrier signals sent over the network line 130 (see, for example, Fig. 1). Thus, the Rosen et al. telephone network is not switched between either the telephone unit or the data processing device, as the Rosen et al. system merely uses the

existing telephone network line 130 but prevents the telephone from seizing the telephone network line 130.

Bulfer, which is directed to "telecommunications network service for converting spoken words to individual DTMF signals" (see Bulfer at column 2, lines 25-27), does not suggest anything related to the above-mentioned distinguishing features recited in claim 1.

Accordingly, independent claim 1, as four time amended, directed to a communication support system have the above features patentably distinguishes over the cited art either taken alone or in combination and should be allowable.

Independent claim 10, directed to a communication control device and including at least similar features to that of the above-mentioned patentably distinguishing features of claim 1, should also be allowable.

Independent claim 16, directed to a telephone service processing method and including at least similar features to that of the above-mentioned patentably distinguishing features of claim 1, should also be allowable.

Independent claim 17, directed to a computer readable medium and including at least similar features to that of the above-mentioned patentably distinguishing features of claim 1, should also be allowable.

Claims 2-6, 8-9, 11-13 and 15, which depend directly or indirectly from claims 1 and 10, should also be allowable for at least the same reasons as claims 1 and 10 from which they depend, as well as for the additional features recited therein.

NEW CLAIMS 18-20

New claims 18-20 are submitted to define the invention in a varying scope and should be allowable for the features recited therein.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

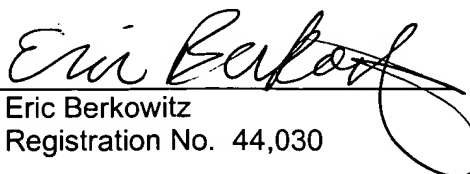
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please AMEND claims 1, 10 and 16-17, ADD new claims 18-20 and the remaining pending claims are provided for the convenience of the Examiner.

1. (FOUR TIMES AMENDED) A communication support system which is adapted to connect a telephone unit through a communication control device to a data processing device and adapted to connect a telephone network to the communication control device, the communication support system comprising:

a command signal recognition unit either detecting a Dual Tone MultiFrequency (DTMF) command signal sent from the telephone unit or a network DTMF command signal sent from the telephone network, and determining, when the DTMF command signal is from the telephone unit, which one of a plurality of telephone services of the data processing device the DTMF command signal from the telephone unit indicates, wherein the command signal recognition unit includes a DTMF detection unit that detects the network DTMF signal sent from the telephone network, the DTMF command signal from the telephone unit having a predetermined value different from a value of the network DTMF signal;

a signal transmission inhibition unit including a switch connected between the telephone network and either the telephone unit or the data processing device to switch therebetween so as to selectively disconnect the telephone network from either of the telephone unit or the data processing device and to selectively inhibit transmission of the DTMF command signal from the telephone unit to the telephone network and allows transmission of the DTMF command signal directly to the data processing device when the DTMF command signal indicates one of the plurality of telephone services; and

a telephone service processing unit that performs a telephone service processing of the data processing device for the telephone service indicated by the DTMF command signal from the telephone unit, the telephone service processing unit starting execution of the telephone service processing when the command signal recognition unit determines that the DTMF command signal is from the telephone unit.

2. (AS TWICE AMENDED) The communication support system according to claim 1, wherein the signal transmission inhibition unit comprises:

a first converter unit that separates a data signal sent from the telephone network into a dual-tone multiple frequency signal and a voice signal;

a second converter unit that separates a data signal sent by the telephone unit into a dual-tone multiple frequency signal and a voice signal; and

the switch, provided on a connection line of the first converter unit and the second converter unit that switches on or off the connection line to selectively provide one of connection of the telephone unit and the telephone network through the switch and disconnection of the telephone network from the telephone unit.

3. (AS UNAMENDED) The communication support system according to claim 1, wherein the command signal recognition unit detects a dual-tone multiple frequency DTMF signal sent by the telephone unit, the command signal recognition unit determining that the command signal is from the telephone unit when said DTMF signal indicates one of a plurality of defined values allocated to the plurality of telephone services.

4. (AS UNAMENDED) The communication support system according to claim 3, wherein the command signal recognition unit detects a dual-tone multiple frequency DTMF signal sent from the telephone network, the command signal recognition unit distinguishing between the DTMF signal from the telephone network and the DTMF signal from the telephone unit.

5. (AS UNAMENDED) The communication support system according to claim 3, wherein the telephone service processing unit performs a telephone service processing of the data processing device for the telephone service indicated by the DTMF signal from the telephone unit.

6. (AS ONCE AMENDED) The communication support system according to claim 1, wherein the communication control device comprises a line switching unit that selectively provides one of connection of the telephone unit and the telephone network through the line switching unit and disconnection of the telephone network from the telephone unit.

8. (AS TWICE AMENDED) The communication support system according to claim 1, wherein the communication control device comprises a DTMF generator unit that generates a dual-tone multiple frequency DTMF signal based on the DTMF signal sent by the telephone

unit, the DTMF generator unit transmitting the DTMF signal from the communication control device to the telephone network before the transmission of a signal from the telephone unit to the telephone network is inhibited by the signal transmission inhibition unit.

9. (AS UNAMENDED) The communication support system according to claim 1, wherein the telephone service processing unit performs one of a voice recording processing, a voice playback processing, a file transmission processing and a telephone number entry processing based on the telephone service indicated by the command signal from the command signal recognition unit.

10. (FOUR TIMES AMENDED) A communication control device adapted to connect a telephone unit and a data processing device through the communication control device and adapted to connect a telephone network to the communication control device, comprising:

a line switching unit alternately providing either connection of the telephone unit and the telephone network through the line switching unit or disconnection of the telephone network from the telephone unit;

a command signal recognition unit that detects either a Dual Tone Multi-Frequency (DTMF) command signal sent from the telephone unit or a network DTMF command signal sent from the telephone network, and determines whether the DTMF command signal is from the telephone unit, when the DTMF command signal from the telephone unit indicates one of a plurality of telephone services of the data processing device, wherein the command signal recognition unit includes a DTMF detection unit that detects the network DTMF signal sent from the telephone network, the DTMF command signal from the telephone unit having a predetermined value different from a value of the network DTMF signal; and

a signal transmission inhibition unit including a switch connected between the telephone network and either the telephone unit or the data processing device to switch therebetween so as to disconnect the telephone network from either of the telephone unit or the data processing device and to selectively inhibit transmission of the DTMF command signal from the telephone unit to the telephone network and allows transmission of the DTMF command signal directly to the data processing device when the DTMF command signal from the telephone unit indicates one of the plurality of telephone services.

11. (AS TWICE AMENDED) The communication control device according to claim 10, wherein the signal transmission inhibition unit comprises:

a first converter unit that separates a data signal sent from the telephone network into a dual-tone multiple frequency signal and a voice signal;

a second converter unit that separates a data signal sent by the telephone unit into a dual-tone multiple frequency signal and a voice signal; and

the switch provided on a connection line of the first converter unit and the second converter unit that switches on or off the connection line to selectively provide one of connection of the telephone unit and the telephone network through the switch and disconnection of the telephone network from the telephone unit.

12. (AS UNAMENDED) The communication control device according to claim 10, wherein the command signal recognition unit detects a dual-tone multiple frequency DTMF signal sent by the telephone unit, the command signal recognition unit determining that the command signal from the telephone unit is detected when said DTMF signal indicates one of a plurality of defined values allocated to the plurality of telephone services.

13. (AS UNAMENDED) The communication control device according to claim 12, wherein the command signal recognition unit detects a dual-tone multiple frequency DTMF signal sent from the telephone network, the command signal recognition unit distinguishing between the DTMF signal from the telephone network and the DTMF signal from the telephone unit.

15. (AS TWICE AMENDED) The communication control device according to claim 10, further comprising a DTMF generator unit that generates a dual-tone multiple frequency DTMF signal based on the DTMF signal sent by the telephone unit, the DTMF generator unit transmitting the DTMF signal to the telephone network before the transmission of a signal from the telephone unit to the telephone network is inhibited by the signal transmission inhibition unit.

16. (FOUR TIMES AMENDED) A telephone service processing method in a communication support system which is adapted to connect a telephone unit through a communication control device to a data processing device and adapted to connect a telephone network to the communication control device, the method comprising:

either detecting a Dual Tone Multi-Frequency (DTMF) command signal sent by the telephone unit or a network DTMF command signal sent from the telephone network, wherein

the DTMF command signal from the telephone unit has a predetermined value different from a value of the network DTMF signal;

detecting, when the DTMF command signal is from the telephone unit, the DTMF command signal indicating one of a plurality of telephone services of the data processing device;

inhibiting transmission of the DTMF command signal from the telephone unit to the telephone network and allowing transmission of the command signal directly to the data processing device when the DTMF command signal indicates one of the plurality of telephone services by switching the telephone network between either the telephone unit or the data processing device so as to disconnect the telephone network from either of the telephone unit or the data processing device; and

starting execution of a telephone service processing using the data processing device for the telephone service indicated by the command signal from the telephone unit when it is determined in said determining step that the command signal is from the telephone unit.

17. (FOUR TIMES AMENDED) A computer readable medium storing program code causing a processor to perform a method executing a telephone service in a communication support system which is adapted to connect a telephone unit through a communication control device to a data processing device and adapted to connect a telephone network to the communication control device, said method comprising:

detecting either a Dual Tone Multi-Frequency (DTMF) command signal sent by the telephone unit or a network DTMF command signal sent from the telephone network, wherein the DTMF command signal from the telephone unit has a predetermined value different from a value of the network DTMF signal;

determining whether the DTMF command signal is from the telephone unit, the DTMF command signal is from the telephone unit, the DTMF command signal from the telephone unit indicating one of a plurality of telephone services of the data processing device;

inhibiting transmission of the DTMF command signal from the telephone unit to the telephone network and allowing transmission of the DTMF command signal directly to the data processing device when the DTMF command signal from the telephone unit indicates one of the plurality of telephone services by switching the telephone network between either the telephone unit or the data processing device so as to disconnect the telephone network from either of the telephone unit or the data processing device; and

starting execution of a telephone service processing of the data processing device for the telephone service indicated by the command signal from the telephone unit when it is determined by the determining that the command signal is from the telephone unit.

18. (NEW) A communication support system which is adapted to connect a telephone unit through a control device to a processing device and adapted to connect a telephone network to the control device, comprising:

a recognition unit either detecting a Dual Tone MultiFrequency (DTMF) signal sent from the telephone unit or a network DTMF signal sent from the telephone network, and comprising a DTMF detection unit to detect the network DTMF signal, the DTMF signal from the telephone unit having a predetermined value different from a value of the network DTMF signal, and a disconnection unit including a switch connected between the telephone network and either the telephone unit or the processing device to switch therebetween so as to selectively disconnect the telephone network from either of the telephone unit or the processing device and to selectively inhibit transmission of the DTMF signal from the telephone unit to the telephone network and to allow transmission of the DTMF signal directly to the processing device when the DTMF signal is from the telephone unit.

19. (NEW) A processing method in a communication support system which is adapted to connect a telephone unit through a control device to a processing device and adapted to connect a telephone network to the control device, comprising:

detecting either a Dual Tone Multi-Frequency (DTMF) signal sent by the telephone unit or a network DTMF signal sent from the telephone network, wherein the DTMF signal from the telephone unit has a predetermined value different from a value of the network DTMF signal;

determining whether the DTMF signal is from the telephone unit; and

inhibiting a transmission of the DTMF signal from the telephone unit to the telephone network and allowing the transmission of the DTMF signal directly to the processing device when the DTMF signal is from the telephone unit by switching the telephone network between either the telephone unit or the processing device so as to disconnect the telephone network from either of the telephone unit or the processing device.

20. (NEW) A computer readable medium storing program code causing a processor to perform a method in a communication support system to connect a telephone unit through a

control device to a processing device and to connect a telephone network to the control device, the method comprising:

either detecting a Dual Tone Multi-Frequency (DTMF) signal sent by the telephone unit or a network DTMF signal sent from the telephone network, wherein the DTMF signal from the telephone unit has a predetermined value different from a value of the network DTMF signal;

determining whether the DTMF signal is from the telephone unit; and

inhibiting a transmission of the DTMF signal from the telephone unit to the telephone network and allowing the transmission of the DTMF signal directly to the processing device when the DTMF signal is from the telephone unit by switching the telephone network between either the telephone unit or the processing device so as to disconnect the telephone network from either of the telephone unit or the processing device.